List three things you found helpful in our Vector Spaces/Inner Product discussions	List three questions you have after our Vector Spaces/Inner Product discussions	Please list any additional questions you have about the course or its material.
1. Explanation of simplifications with symmetric functions. 2. Seeing the pictures and visualizing the graphs. 3. Integration review.	1. Why can we sometimes ignore the imaginary components of expressions? 2. When can we make which substitutions? (i.e. sin's/cos's to e^stuff) Always? 3. Are the Fourier Series expressions that we derive in class true for those types of cases always? Or are they simply examples to learn the process?	
My mind was blown, I still don't know what we are talking about. I haven't read the Wikipedia link posted on the homework so am still not sure where the Fourier series applies to life but I look forward to clarifying that real soon. Things still seem so abstract that it feels like I am diving into a different realm whenever I walk into the classroom. But back to the question, the three things that seem helpful so far in the construct of vector spaces and inner products are: - that there is a correlation between basis of points throughout a space and a common functionality between them. -I can keep adding up stuff to get to where I want -and that everything seems to occur through a periodic function of 2-pi thanks for the ride!!!	Where are we? Where am I in respect to we? again when will all of this make sense?	
The actual example (with numbers - something like we would see on a test) was the most helpful. I learn best through having the definition/proof shown first, followed by examples of how to use the information provided.	Can we please do more actual examples? How does this help me understand other concepts/why did we learn these?	Can we do more examples using actual numbers, like something we would see on exams? There is only so much a proof/definition can show.
Covering some real number examples, Kronecker delta explanation, relatively linear buildup of concepts	How to really work with N-dimensional inner products (beyond making all the other terms drop out), what applications it can be used for, how to recognize when terms drop out quickly	I find the class entertaining, if a tad hard. Makes me wish that I hadn't taken the last year off from math, and that it had been only one year since Calc 3 instead of three years. So long as solutions are available, I'll manage.
Examples Orthogonal vectors discussion homework help in class	What do the the basis help us do? Will < & > always denote inner product or will they denote dot product too? Is a linear combination related to an inner product in any way?	
examples, visuals, explanations	1) Will there be a large section of the exam on vector spaces or will the focus be more on fourier series? 2) Are we going to have to prove orthogonality of abstract functions or will everything mostly be in terms of cosine and sine functions?	
The example of directions and how far to go in each direction. This gave me an idea of what we were doing. The amount of times you went through this stuff really has put it in my brain but is still lacking examples and how to use it in a problem. Taking the properties from a dot product and applying the concept behind them to the inner product.	How does this apply to a real life example other than that stinking spring mass crap? How would a 4D or nD vector space hold purpose to an engineer? Example? Do we need to know from Diff Eq, all the ways to solve ODE's or can we "know of them"?	
Describing how we can have more than 3 dimensions/directions for a space Examples Explanation	-When do we know to use an inner product in a problem? -Since the inner product is essentially a dot product, are there any different rules besides those of dot products, like =0 when orthogonal, etc?	I don't have any other questions, but if possible, a few more examples here and there would help understanding.
1.)Its nice how you start lectures with recalling what we did making things fresh for that class 2.)The examples were extremely helpful, I work better with numbers and seeing examples 3.)The phase plane	One question I had is does this apply to engineering at all, like will I see this in any practical use when in the industry?	None
The fact that it was presented as a dot product made the idea much clearer Examples of different vector spaces, although somewhat odd, helped Also just seeing them used helped	When are vector spaces with many many dimensions useful Are there any inner products that aren't possible or extremely difficult Can you briefly discuss inner product use when we get to the topic again	
1. The idea of cardinal directions helped the idea of vector spaces click in my head. 2. I realized that I knew what an inner product was, I just didn't know that is what it was called, so I now have a new (correct) term to use. 3. It is helpful to know that, in R2, as long as 2 vectors are not parallel, you can get to any point in the space.	1. I do not think I understand the significance of orthogonality yet. 2. Why is it important to complicate such a simple idea of 2 vectors in a 2D plane? i.e.. What is the significance of orthogonal functions? 3. How do vector spaces apply to fourier series?	In information systems, we are learning generally the same things about fourier series, but we are never asked to find Bn, only Ak and sometimes Ao. Why is this? Is Bn somehow related to An the way Ao and An are related?

1. The idea of "isolating" the variable you're looking for by using orthogonality 2. Relationships to Physics and the conservation of energy and stuff (cool, and just helps keep it interesting) 3. Dot product "hiding" an integral behind it--finally makes sense!	1. Yikes...still don't understand what it's all about. 2. Still don't get the part about solving a trig-identity problem with complex exponentials. 3. I still don't understand the significance of linear independence.	
Examples Metaphors When you tell us which equations to memorize	When is this applicable? What types of problems will we have to answer? Do we need to memorize any infinite series?	Around when do you think our first test will be?
1) keeping up with the directional metaphor really helped to make sense of everything 2) reviewing the dot product and some elements of DiffyQ made things alot easier 3) reviewing material from the previous class right as class starts is way helpful!	1) how much of the tests in this class are conceptual vs with actual functions? 2) are linearly dependent and redundant the same thing? 3) how much coffee do you consume in a day?	Thanks for doing a great job!
I have no idea what we did in class, but I like to integrate.	Why are we doing this? Can the HW be more calculation material rather than stuff I have to look at the solutions for?	
Starting with geometry vectors then finding abstract parallels. Using Euler's formula a lot to go between sines and exponentials. Integration by arguing.	Are there any other standard bases for functions? Are we going to get to (as in info systems) that you can integrate over any period? 3?	yay math
The concept of orthogonality Finding out what simple vector spaces look like on a plane The concept of a basis.	What is a phase plane? How does e^ix turn into sines and cosines, exactly?	Its very confusing. I feel like I hardly understand it, but I can still do the hard math. Some example problems of applications would be nice.
The map and directions analogy for the basis vector discussion, the example problem of how to solve for coefficients using the inner product, and discussion of what linear independence is were helpful.	We said that a vector space is a collection of vectors that are closed under the rules, but what does "closed under the rules" mean? Can we tell that a function is neither even nor odd using just math or do we always need to draw a graph to make sure? I can't think of a third question.	For the Fourier Series that we derived on 9/20/2011, what is L exactly? It seems like it's definition varies between textbooks a little bit.
-The multiple examples of the same problem with just a change in sign -Understanding the differences between when n and m are equal and when they aren't -Understanding the dot product and all the rules that apply through the examples and notes	-How will these be tested over? -How the non 2 pi periodic funcitons work? -Are basis just a explicit decription of the multiples of the funcitons?	
Graphs Referring to 3D space with your arms Simple examples	Nothing specific, maybe what would a test question look like.	
1. Examples are really helpful! I have a hard time understanding things through just the vocab. 2. It was helpful when you showed how functions follow vector rules. 3. Using the simple vectors to show how you only need a small set to detail a vector space.	1. How does a set of vectors detail a plane? 2. Is there some way to visualize a vector space? 3. What is the smallest dimension a vector space can have? Two?	Are the homework's going to be weekly or paced off of how we move through material?
the rules of a vector space were constantly brought up, inner product was related back to the dot product, the rules of the inner product were constantly repeated	Why are vector spaces important?, Why is it important to know if functions are orthogonal or not? What do vector spaces have to do with Fourier series	
You make sure you answer students question before moving on. However, I don't feel like I know enough about "vector spaces" to understand the question. The same is true for homeworks.	I really don't understand much of anything. I will be seeing you in office hours if this next homework goes as well as the last.	I do not believe it is your fault i understand nothing. Nor mine for I try very hard to ask specific questions. I blame it all on the material.
Linear algebra review of VS and InnProd showing the basis arguments discussing the fact that visuaization not always possible (mental image stuff)	it seems dealing with infinite series that everything(litterally) would be within the vector space... if we orthoginalize everything we can handel larger ammounts of data, but when is this approppriate?	im kinda slow still with the e^ix => sin & cos.... espically in the examples we did using inner products
still confused	not real sure how to ask questions on this subject i am confused, how to apply these inner products	
the equations given the notes for when to use them and the stories to ease the mood		
It is extremely hard to answer this question since I have not yet seen its application. The road map and how can you get places discussions were sounding good, but i am still waiting for the full realization.	I guess I still do not understand the relation between the Spaces and the Inner Products.	I want to solve a heat problem or something similar soon so that I can see important this topic is to current science.

1.) Continually pointing out the similarities between dot product and inner product helps us to understand a new idea in terms of one we already have a good grasp on. 2.) The lectures had a good pace between theory and examples, which is especially helpful for abstract ideas. 3.) We quickly got to the applications (orthogonality, geometry) that helps keep interest in abstract ideas.	1.) Are inner products in some way related to convolution integrals, since they have a somewhat similar form ? 2.) Are there any mathematical constructs that don't follow the closure rule required for vector space? 3.) If you take the inner product of two continuous functions, it relates to their geometry. Are there other ways to express the "angle" between two functions, like perhaps the angle between their derivatives at a point? Or	
Notes on board Discussed in detail Asked if we had questions	Can't think of any now. I'm sure I will, and then I'll come to office hours	
1. definitions of mathematical terms 2. example problems 3. reasoning out the solution	1. I'm still not quite clear on what they are/ what their purpose is.I found the homework to be very confusing. 2. what role do basis play in vector space? 3. orthogonality is important because it makes equation nice, why?	Can we do more examples after the initial introduction of the content?
1. Repeating definitions at the beginning of class so they are stuck in my memory 2. Doing the recall at the beginning of class always seemed to clarify things for me. Stating things in more simple and concise terms. 3. Relating the concepts back to things we did in diff eq.	1. I am still not completing understanding the sigm nm thing. I just don't understand when it is applied. 2. How would we be tested on this material? It seems like we basically built our "toolbox" so I don't know if we should be able to do the proofs of the tools or just know them. 3. I am still struggling with finding the finding the basis.	None
Repetition of vocab and key concepts Repetition of vocab and key concepts Repetition of vocab and key concepts	How fast do things get hairy when you increase dimensions? Is there anytime where the number of bases is more or less than the number of dimensions? To what dimension/space do we need to be familiar with this?	
Definitions, examples, and repetitiveness	How are they applicable in real life? Isn't there an easier way to describe all this info? What is the correlation of this information to F.S?	F.S is making sense. How will the rest of the course go?
I liked seeing the relationship to integrals and how they were kinda like inner products. Can't really think of much else. It was a little bit of a blur, and I never really understood why we were worrying about vector spaces.	Where does this apply, either in applications or in future course work. I kind of understand how they are like linear combinations which we beat to death in Diff EQ, but that's about it. Can't really think of anything specific after that.	When do we get to use numbers?
The lectures are interesting, keep up the good work! x3	What is their application? I have a hard time understanding things/ wanting to understand things when I don't know their application.	
Defining a vector space as a collection of vectors that obey a set of rules/axions and are closed under the rules made a vector space more imaginable for me. Finding the inner product of a function f and a function g you need to integrate the product of them and take the integral from -pi to pi with respect to x In order to get ace of n you multiply f(x) by cos(nx) and to get b of n you multiply f(x) by sin(nx) and ace of not you only need to take the integral of f(x)	I don't understand how you can have more than one basis in a space? Cos(wt) is a bunch of vectors in a space right? Why is ace of not divided by 2pi instead of just pi like ace of n and b of n are?	None
1.Starting out with what we already knew then going abstract 2.Explaining how a vector space is formed 3.How to find the basis of a VS	1.How is this useful? 2.More physical meaning for an inner product	Nothing right now
The link to knowledge about geometry Presentation of the dot product with the inner product Examples used in class	Can vector spaces be used in applications other than decomposing functions to simpler functions such as in the fourier series? Can discrete values be found using vector spaces? Example if you have a complex periodic function and want to find the value of the function at x = k. Are there other common basis vector spaces used in engineering other than the ones we have already discussed in class?	
- You recall things each lecture that we did last lecture which helps remember - inner product is dot product - explaining the even*odd relationship for integrals was helpful	- I still don't really understand what a Basis is and why you need them - Inner products are dot products of functions?? - I don't know what else to ask at the moment?	
I know how to make them I understand how they connect with functions I liked how it connected with f.s	I have no questions	

Specific examples with numbers and functions would have been helpful in class.	How does this relate to anything?	
Specific examples with numbers and functions would have been helpful in class.	How does this relate to anything?	
Making abstract concepts concrete by applying them to things we know (3d space, examples, etc) Thorough proofs, taking what we know and understand and building those blocks into a new construct of vector spaces! :D Inner products are pretty neato	I honestly feel like I grasp the concepts well enough that I can apply them when the situation warrants... I guess the one question I have is: How exactly are we going to use this concept in specific problems posed in mathematics?	Not really any! I'm pretty happy with the course. It's really abstract and complicated material, but I'm grasping it fairly well I feel. The homeworks are challenging but reinforce the main ideas of the course.
	I am very lost	I wish we did more examples instead of all this abstract theory
1). The key points part of the discussion was helpful 2). The properties of dot products allowed me to better apply/understand concepts regarding vectors. 3). I found that the orthogonal functions example really enhanced my comprehension of the material as well.	1). What is the significance of vector spaces? 2). What is the significance of inner Products? 3). What is the most important take-away from the lectures?	
1. I found going over the rules of of adding and manipulating vectors helps my understanding of the inner product discussion. 2. It was helpful when we looked at unit vectors and dot products to develope more of a visual (in our heads) understanding of what is happening. 3. It is very helpful for me when we take a step back and think about what we are doing and what the vector space would look like.	1.) How is what we are learning applied? 2.) If there were numerical values used instead of only variables, what would the initial numerical values be in perspective to what these types of problems can be applied to? 3.) In lecture we discussed the "basis" for the space. Is this always/usually 2PI or how do we find this normally?	
I'm not sure if I can name three things it just started making some sense	not applicable	not applicable
examples, theory, more examples	don't have any at the moment	none
Not so much to describe for now unless I really understand how to go about it	Can we do more examples?	The topic seems so abstract
the examples with the colored graphs helped me alot. I could see what the functions were doing and finally realized how they were modeling a function. mainly just doing the examples helps alot. It shows me the steps that i have to memorize because it seems very abstract and there are lots of tip and tricks it seems like. and if you miss those you might get stuck.	what exactly is this used for? I dont understand the application of what we are learning or what it means. which is really what i like and when i get interested is when i see the application. Right now i just see abstract and conceptual math.	If the homeworks are extremely difficult for me and i even have trouble following the solutions at times will i be able to pass this?
specific examples	Why are we doing this? What does it mean?	
Connecting the Inner Product to the Dot Product at the beginning. The pictures to show how the F.S. converges to the function and also to demonstrate Gibb's phenomenon. Going through the process to Fourier Series step-by-step AND showing the connections between each of these steps.	I noticed that when we apply the Fourier series to an 2L-periodic function part of the result is a sin(n*PI*x/L), which reminded me of the similar part of the Schrodinger wave equation from Modern Physics. Is there any connection between these? I assume we will get to this, but how does a PDE choose which case of the Fourier Series we use? How is the Gaussian Function going to play into this? From the homework, everything seemed connected somehow except for that.	
They are supposed to help with our understanding of later material. I haven't done almost anything with complex numbers/ functions before this. I learned about orthogonality.	What is the point of bases? If what we're doing now in class is in 2-D real space, why do the bases have infinitely many terms (i.e. B={...,e^-ix,e^0,e^ix,...} etc.)? How do vector spaces and inner products relate to FS?	Well, the whole couple of weeks until we started FS were just confusing to me, so there's a lot I don't understand, but it's too broad to put into a question.
Relating things from differential equations into this concept, thinking of mass-spring systems, using dot product rules.	When is this applicable in real life? Why would you want to use these? How can I use these as an engineer to help me?	
1.) I found the notation <x,y> easier to understand because it streamlined the calcs (at least to me). 2.) The whole matrix dimension explanation also worked out for my simple mind. 3.) This was a little while ago so I can't remember anything else :/	1.) I still don't see how this applies outside of class. 2.) I'm sure I'm going to screw it up badly on a test. 3.) Can't remember much else to be honest (without going back into my notes).	At the moment I can't think of anything else, but I'm sure I'll have a question right after I submit this.
	What is the correlation between said vector spaces and fourier series? Is it just the graphs? What's the difference between an integral and an inner product? They look the same.	It's not a question but I'm still having a hard time connecting concepts.

repetition of the same simplifying equations the simplification of basically only needing to find 3 coefficients to find a unique F.S. random tangents in lecture that keep me in reality	are the integral bounds for the F.S. coefficients the same as the bounds to which the variable is defined on, or always (-PI, PI) or (-L,L)? I feel like we redefine "infinity" for different assumptions, wouldn't that cause error in our assumptions? can/will this be applied to any calculations we do in our future job, or are these where our equations are derived from and this is more theory based?	
-Proofs -Putting things in lamens terms, math speak is hard to understand -speed was slow enough	Can we get a specific example of what you would use this for in an engineering setting?	Not a whole lot of questions yet, but I haven't had much time to ruminate on the material yet either.
Repetition in the concepts (review from the prior class's material) helped with understanding the concept. Discussion/explanation about vector spaces and inner products. Examples and drawings from class.	I don't have any specific questions about the content, but will we be doing more work with vector spaces in the class?	Is there any time when all the concepts become fused together? I understand that this is a survey course, but I'm not sure I see a relationship between what we've been doing so far.
1. This material is very rigorous and conceptual, I really like that you are so approachable with question and that you make class as interesting as you can...Thank you 2. I can't thing of anything else, I'm not really getting most of it.	1. I would like to review the method of putting ODE's into matrix vector form	1. Is there a way that we could get some more practice on problems that we could expect to see in class that are not worth points and therefore we can have the answers too so we can work backwards in order to help us understand.
I like the recalls at the beginning of class. It is very helpful for me to get my brain around what we did last class. The way you build the understanding of things incrementally, while still giving us the big picture at the very beginning is excellent.	I don't entirely buy the fact that a vector space with an infinite number of orthogonal vectors is truly an infinite dimensional space. I get that if you have lines that are orthogonal, they form a multi dimensional space. But how do sine waves with different frequencies form different dimension? I'm just having trouble wrapping my brain around that. What would a 'sine dimension' look like?	Not a question, but I have to say I have come out of this class most days with a big grin on my face and my mind blown. I really do love math, especially this crazy stuff and I haven't had a teacher that can really get it in my brain like you have been able to. No other class this semester (or in a long time) has done that. Thanks :)
The thing that absolutely helps me the most is when you compare abstract math ideas to real concrete subjects I can think about. Describing a vector space as a lego tub was brilliant to me, and it made everything seem very tangible to me. I felt like I could get my mind around it after that comparison. Another example was when you personified the sin functions into people who were scared to "jump" they couldn't jump so they were getting all worried and confused. I will never forget what gibbs phenomenon is due to this personification. Another thing that helps is that you spend time in each recalling what we learned before. It doesn't provide for perfectly linear notes all the time, but it does give the repetition and allows it to sink in. These reps are very beneficial to me and I receive more value hearing our class talk about them, then me simply reviewing me notes. A third thing is simply that it is enjoyable to take this class. While its difficult material and somewhat abstract, I always feel like I am learning something, even if i'm not sure what that is. Hopefully this learning will easily transfer to homework assignments and tests.	Can any exercised problems come out of these discussions? What I mean is, in classes prior, a topic is covered, then they turn you loose on a whole slew of problems, and say have at it. I've spent some time thinking, is this just to prepare for future topics? Or are there exercises one could do to further familiarize themselves with these ideas. --That is the main question I have. It seems to all make sense when we talk about these topics in class, but it is difficult to keep them tangible once I leave class or try to think about them on my own. I think either a repetition of this idea or relation to something I can grasp and easily think about would help.	
Having taken Linear Algebra before, and hence, having a large prior experience with them(including full proofs)... I realy didn't improve my experience with them(this will probably come with most Lin al topics)	Other than the possibility of defining projections and residuals when dealing with inner product spaces, nothing.	
I liked relating vector spaces to the dimensions of space. I liked the practical application that vector spaces are representative of energy in a phase diagram. I think that knowing that you need vectors to reach all points in a given vector space is very handy.	How does this connect to fourier series? How does this concept connect to vector spaces that go to infinity? How does this concept connect ot infinately small vector spaces?	
I know that the idea is to find out what vectors we can throw out and still get to every point in space. I could see how you got from one point to another in a derivation (but I still don't know why we were doing it) Finding linear independence can help us throw out redundant vectors	What does an inner product do? How do I determine what the basis is? What do I do with the basis?	What do inner products have to do with anything? What do I do with a spanning set?

Your lively way of presenting A recall every class period Examples	I don't even understand what I don't understand...	
1. pictures 2. notes 3. your willingness to explain when we dont get something	1. when will we use this in an engineering application 2. still a little fuzzy on how they relate to fourier series 3. how much do you bench	
1. pictures 2. notes 3. your willingness to explain when we dont get something	1. when will we use this in an engineering application 2. still a little fuzzy on how they relate to fourier series 3. how much do you bench	
Reviewing material from previous lecture Examples Relating it back to Diff EQ	How does closure relation yield another vector in the space? How can a vector space make sense for nD space? How do you tell if a set of vectors are orthogonal?	None
The way you ran through the derivations The comparison between dot product and inner product The example with orthogonal functions	So you can add the same vectors to each other countless numbers of times to get to a point in space? What else are inner products used for? Why do we have to forget about the geometry?	Nope thats all i have.
-Drawings on the board help me visualize what I'm looking at -Showing how you get from A to B using multiple steps -Working through an example right after definitions/derivations	? ? ?	
1. Having compared "Inner Product" to "Dot Products" for abstracts 2. Showing the rules of "Dot Products" worked out for each example to ingrain the process into us for when we applied the same rules to "Inner Products" 3. Seeing the d_mn piece-wise function worked out (zero when n=m, 2*pi when n /= m) instead of giving us the formula and telling us to remember it	1. Is i j & k-hat a linear combination for the 3D vector space of distance? 2. Once we know a_0, a_n and b_n, then are those the three vectors that can be used to "take us to" any point within the vector space? Essentially, are they i j & k for abstract vector spaces? 3. As of now I'm good. I'll have plenty more depending on your answers to the aforementioned questions.	
Just going through Inner Products some more. We covered them a little in linear algebra, but I had forgotten some of it. I still remembered vector spaces however.	I don't have any questions...	Should I review differential equations before we get to that in AEM? It's been over a year and I don't remember all the specific kinds and whatnot.
Learning about inner products helped me understand dot product better.	I am still kind of confused about multiplying matrices. Maybe I just haven't practiced enough. I don't think I have 3 questions about vectors spaces or inner products.	
- Lots of background and explanation - Thorough examples - Showing the various approaches that can be taken	- When some of this is even used in a non-math setting. - "Is this real life, is this going to be forever?" - Some of the approaches taken in the worksheet solutions are fairly confusing and I have never been exposed to a technique like that	Very enthusiastic and interesting lectures, they just get hard to follow.
-Reviewing the previous lecture's content each lecture -Using compass coordinates to describe the basis vectors -Review of dot product rules/properties	-Will we come back to this material in future lectures? -Why do we only want to take the real part of <e^inx, e^imx>? -Should this have been as confusing as it was to make sense of the material?	-What are the primary real world applications of vector spaces?
Their relation to Fourier Series. Using the dot product to understand how it works. The idea that have to let go of our geometric thinking	How can you find the geometry of the functions given if their inner product doesn't equal zero? How do you find the inner product of more than two functions? Third question?	
1) the inner product examples 2) explained vector space in length 3) went slow enough to grasp it all		
The copious amounts of examples, the daily "recalls," and the pseudo Q-A sessions helped to clarify the material.	What is the basis? What exactly is the abstract inner product? What is the point of orthogonality?	
Vector spaces described as a collection of math objects that do not "point". The basis is the all of the linearly independent vectors that cover a space. Inner products can be used to simplify solving for coefficients.	What is a basis? (Have an idea, but still very abstract to me) Is a basis a spanning set? Do inner products only work for orthogonal sets?	What is a way (or best way) to get a grasp of this extremely abstract material?
*better understanding and better visualisation of how vectors act in space. *Every vector space has a basis that can be used to get to every point in the space. *Differential equations can be solved using geometry	*How does vector Spaces/inner product relates to integration? *What are evenly independent vectors? *What that the matrix do to a vector?	
I thought it was really helpful that you went through problems. I also thought it was really helpful how you kept going over and recalling things that were important. I think arguing is helpful :)	So far, I don't think I have any questions that I haven't already asked you - I hope this is okay.	I just want to say you're an awesome teacher :)

1. Vector addition and scalar multiplication follow rules that made more sense because we started from the basics of vector spaces 2. Relation between inner products and integration 3. It makes Fourier series problems easier	1. Where did the basis come from? 2. How do vector space relate to real life applications?	
1) Examples are helpful, but i wish there had been more in this section of material. 2) Visual representations were helpful, whether drawings or body gestures etc. 3) Clarifying points everyone seems to be confused on.	1) What applications do vector spaces have? 2) What kinda of questions specifically could we see involving vector spaces? 3) Will they be included on the first test?	When finding fourier coefficients, is the constant in front of the integral 1 over the period or 1 / (2*period)?
The relationship made between legos and vector spaces helped me envision what they were	How we work with them? Types of problems we will see? Applications of vector spaces in the real world?	...Could we get more worked out examples?
I found the amount of examples to be helpful in our discussions though maybe sometimes bullet points with instructions to go about solving problems would help for my style of learning. I'm not sure if this is even applicable because it is such a conseptual class. I also found your high energy to keep me interested throughout the lectures.	I don't have any questions at this point.	
the examples, the way you explain things while still writing on the board, your high energy to teach	I do not have any questions at this time	How many tests will there be throughout the semester?
The lectures The notes The examples	I still don't know exactly what those two are	
1. explanation 2. examples		
Being told not to try and visulize them Being told that they are dot products of functions Being told they siplify equations	How do they connect to other things? When can we use them? Are there any other rules for V.S. the addition and multiplican	More examples in class
vectors are not just a magnitude and direction. They must just follow a certain set of rules		
The concept of orthogonality, which is familiar and tangible. The derivation of our bases. Physical and visual examples of what a vector space is.	How are the cosine and sin functions orthogonal? How can cosine and sine cover the entire vector space when they seem to span just horizontally? Do vector spaces apply to anything other than Fourier series?	Can you prepare a list of useful trig identities and conversions from trig functions to e functions?
-Taking the time to explain things a little different. (Like the taco analogy for a linear combination.) -Useful for other classes that the teachers don't teach FS as well (Cough, Info Systems, Cough) -The class is helpful, enlightening and entertaining. It is one of the very few that I never feel like my time was outright wasted.	-Still not entirely sure what they have to do with the rest of the class. I know that a Fourier Series is a vector space, but I don't know why it was so important to spend 3 or 4 lectures to discuss the rules of VS. -Where did the Inner Product go? -Why are the Rockies losing to the Astros?	
Um, I'm pretty lost. I'm sure there would be a few helpful things if I knew what I was supposed to understand and how my notes would all tie together. I can kind of grasp the concept behind it, but the math and everything else is a little confusing.	When does it make sense? Is this common to be confused? Eh ???	I should really go to your office hours.
Taking the time to write out a "Recall" section at the beginning of every class (and during class). This helps pick my thoughts up where they left off last class, instead of just diving into the new material.		When is the first exam? How well should I be picking up the material at this point (i.e. is it 'ok' if I'm not 100% on everything we're covering)?
You can get anywhere in a soln space with a basis of the soln space. Inner products are the equivalent of dot products and show orthogonality. They are part of Fourier Series	How would you use Vector Spaces and Inner Products outside of F.S.? I don't have many more.	
constant repetition study groups with friends fun lectures to keep me interested	i just need to use it more i think whats the deal with error in FS? these dirac delta functions are wack. why do we need them if we already understand periodic functions? when is our first test?	
Seeing how these two things tie together functions and vectors into similar operations. It kind of shows the convergence of math concepts (i.e. it makes sense!) It is extremely helpful for info systems with fourier series as well as in probability and statistics with the concept of a sample space. Seeing the abstraction of the terminology provided a basic level of understanding for these other classes. They are very inclusive, and if used properly, can be used to represent many different functionalities of math	None come to mind. I am unable to compose one. What other questions should I have?	None. This is definitely one of the best taught math classes I have taken. Thanks.

1) Relating the idea of dimensions to basises, or basii... 2)We can use a dot product to pull out an individual variable or constant from a huge basis. 3) Perpendicular vectors have a zero dot product.	1) How can I visualize orthogonal functions that are not linear? 2) Do we still consider orthogonal to mean perpendicular when we are talking about orthogonal functions? 3) Whats the difference between a dot product and inner product again?	Sorry, I forgot about this until just now.
1. Physical examples. 2.Comparisons to old stuff we did. 3. Applications (similar to physical examples I know...)	1. Will this ever make sense? 2. Will there be a time when it breaks down into a simple "do this" sort of thing where we will have a procedure? (because right now I feel like every homework problem or example is 100% different from the last). 3. It's hard to ask questions about something I can't wrap my head around.	Again... will this ever make sense?
		Students keep asking "where is this going on?", "where do these equations apply?" "what do these equations mean?" The answers are just abstract as the equations. I believe the only real-world example or analogy we've had is one-dimensional heat transfer. I can picture an infinite series of sums. I would like some more tangible examples, or if these things only exist in the math realm, then some more relatable analogies.
The idea of a Map, The idea of cardinal directions, Why we make orthagonality so important when getting to a point	How does that relate to a F.S., or any other content of the class Why did we spend so much time deriving the equations rather than looking at the uses of the equations in real world applications Should the idea of a vector space even matter to engineers if they only care about using equations to solve problems.	
Relating vector spaces to directions you can go on a map definitely helped. How there can be many different possibilities. How there is only one "best" solution--orthogonal relationship	What are we going to use these vector spaces for? Is it lunch time yet? Why don't we get labor day off of school?	are the integrals on the test going to be as hard as the ones we are doing on the homework? They are not particularly difficult, but they are long and tedious.
Repetition ("Recall") of Fourier Coefficients eqn's. Explanation of Integration by Parts Value of Euler's to make integrals easier to work with	I could use a slightly better grasp on what the basis of a fn is. (I'm stretching now, because I have a feeling my questions will be answered as we get more into the semester) How am I going to use VS/IP in my career as an M.E.? And what is an application for Fourier Series in my future?	
Simplification of problems They don`t have to be x or y direction vectors, they can be sines and cosines	Why do we need orthonality?	
-relation to mapping and outside just a mathematical concept -hints at how to apply it to more dimensions - revisiting old equations (spring)	- still confused on some of the jumps from f(x) to e to cos and sin - Are these tricks going to be only ones, or will we have to find more? - Will we be using these later to further our understanding of them?	
Comparison to non-math objects Rational arguments Passionate professor (some professors are just really dry and hard to learn from, you keep the class engaged really well)	Since the inner product has rules similar to a dot product, is there something similar that we could use the rules of a cross product? Where do these apply to besides FS? How practical would this model be in an engineering setting, what types of problems would I estimate an answer to with this tool?	
The detailed examples, the derivations, and the real life applications.		
Spending a lot of time on it. Not much else it was the start of class...	How can this be applied? What is the benefit besides academia? When will it make more sense?	None sorry this is late.I'm doing it on my phone in your class.
Examples Proof of the concept Discussion from lectures	I really don't have any questions.	When will the material make any connection to my specific area of interest, electrical engineering?

		orthogonality, while I believe I can follow most of the explanations given, still doesn't quite completely connect.
The examples, the repitition, and the use of different conceptual models.	none	none
Recalling the basics of what we have done at the beginning of every lecture.	How is this going to help us?	